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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/648,114	08/25/2003	Srikanth Rengarajan	42P17135	3148

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EXAMINER

HUYNH, KIM T

ART UNIT PAPER NUMBER

2112

DATE MAILED: 10/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/648,114	Applicant(s) RENGARAJAN, SRIKANTH	
	Examiner Kim T. Huynh	Art Unit 2112	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 August 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-11,13-18 and 20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1 and 3-9 is/are allowed.
- 6) ☒ Claim(s) 10-18 and 20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____ |

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DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 10, 13, 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hewitt et al. (US Patent 5,956,493) in view of Holm et al. (US Patent 6,785,755)

As per claim 10, Hewitt discloses a method, comprising: determining which pending bus requests from clients have a highest programmable hierarchical priority and a greatest time interval since requesting access to a bus, based on an algorithm; and granting access to the bus based on said determining. (col.2, lines 19-47)

Hewitt discloses all the limitations as above except granting access to the bus based on existence of at least one special condition consisting of at least one of a bus lock condition, a sleep entry condition, and a lock-out condition.

However, Holm discloses the arbiter grant the bus mastership based on conditions occurs when none of masters require use of the bus, where no master is able to use the bus occurs when all masters are waiting on slaves that have issued the split response, occurs when one or more masters are involved in the split response and no other master is requesting the bus mastership, occurs

when the locked master has received the split response, the arbiter cannot allow a different master from corrupting the locked master's lock transfer and the arbiter must grant the bus mastership to a master that will only drive idle transfers. (col.1, lines 34-59)

It would have been obvious to one having ordinary skills in the art at the time the invention was made to incorporate Holm's teaching into Hewitt's system so as the master to have the benefit from having a low access latency to the bus. (col.1, lines 34-59)

As per claim 13, Hewitt discloses wherein said determining further comprises determining priority based on order of physical connection among the clients, responsive to multiple clients having the highest programmable hierarchical priority and the greatest time interval since requesting access to the bus based on the algorithm. (col.2, lines 19-47)

As per claim 15, Hewitt discloses wherein the arbiter is to grant bus access to a requesting one of the target clients based on round-robin arbitration. (col.1, lines 37-46)

3. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hewitt et al. (US Patent 5,956,493) in view of Holm et al. (US Patent 6,785,755) and further in view of Chen et al. (US Patent 5,546,548)

Hewitt discloses all the limitations as above except wherein the arbiter is to give priority to retried bus requests before the pending bus requests based on the hierarchical ranking and the time interval. However, Chen discloses the arbiter configured to minimize retry. The priority is modified to its predetermined priority such that subsequent retries will be attempted and subsequently granted. A retry be timed and permitting a subsequent retry to be initiated. (col.4, lines 18-43)

It would have been obvious to one having ordinary skills in the art at the time the invention was made to incorporate Chen's teaching into Hewitt's system so as to permit flexible prioritization of access to a bus. (col.9-11)

4. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hewitt et al. (US Patent 5,956,493) in view of Holm et al. (US Patent 6,785,755) and further in view of Modelski (Pub No 20020120828)

As per claim 14, Hewitt discloses all the limitations as above except wherein: the first type of clients are master clients; a second type of clients are target clients; and the arbiter is to arbitrate bus requests from the target clients separately from arbitrating the bus requests from the master clients. Hewitt discloses all the limitations as above except arbitrate pending bus requests from target clients separately from arbitrating bus requests from master clients. However, Modelski discloses split transaction depend on master request bus(MRB) and slave result bus(SRB). Each operation starts with a request and arbiter. The MRB and SRB

are separated from each other and are pipelined. Masters assert their ready to the SRB arbiter and slaves assert their ready to the MRB arbiter. (paragraph [0148 & 0158])

It would have been obvious to one having ordinary skills in the art at the time the invention was made to incorporate Modelski's teaching into Hewitt's system so as to provide a method of directly manipulating a bit field without the use of separate insert or extract instructions. (paragraph [0007])

5. Claims 16-17, 20, are rejected under 35 U.S.C. 103(a) as being unpatentable over Hewitt et al. (US Patent 5,956,493) in view of Modelski (Pub No 20020120828)

As per claim 16, Hewitt discloses a system, comprising:

- a bus to transfer data between clients; (col.1, lines 8-12)
- a volatile memory coupled to the bus; and (col.4, lines 45-53)
- an arbiter coupled to the bus to arbitrate pending bus requests from clients (col.2, lines 19-47)

Hewitt discloses all the limitations as above except arbitrate pending bus requests from target clients separately from arbitrating bus requests from master clients. However, Modelski discloses split transaction depend on master request bus(MRB) and slave result bus(SRB). Each operation starts with a request and arbiter. The MRB and SRB are separated from each other and are pipelined.

Masters assert their ready to the SRB arbiter and slaves assert their ready to the MRB arbiter. (paragraph [0148 &0158])

It would have been obvious to one having ordinary skills in the art at the time the invention was made to incorporate Modelski's teaching into Hewitt's system so as to provide a method of directly manipulating a bit field without the use of separate insert or extract instructions. (paragraph [0007])

As per claim 17, Hewitt discloses wherein the arbiter is to consider the time interval indicating how long each of the bus requests has been pending only when multiple ones of the pending bus requests have a same highest programmable hierarchical ranking. (col.2, lines 19-47)

As per claim 20, Hewitt discloses wherein the arbiter is to grant bus access to a requesting one of the target clients based on round-robin arbitration. (col.1, lines 37-46)

6. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hewitt et al. (US Patent 5,956,493) in view of Modelski (Pub No 20020120828) and further in view of Chen et al. (US Patent 5,546,548)

Hewitt discloses all the limitations as above except wherein the arbiter is to give priority to retried bus requests before the pending bus requests based on the hierarchical ranking and the time interval. However, Chen discloses the

arbiter configured to minimize retry. The priority is modified to its predetermined priority such that subsequent retries will be attempted and subsequently granted. A retry be timed and permitting a subsequent retry to be initiated. (col.4, lines 18-43)

It would have been obvious to one having ordinary skills in the art at the time the invention was made to incorporate Chen's teaching into Hewitt's system so as to permit flexible prioritization of access to a bus. (col.9-11)

Allowable Subject Matter

7. Claims 1-9 are allowable.

Applicant's claimed invention is deemed allowable over the prior art of record as the prior art fails to teach or suggest wherein the clients include master clients and target clients, wherein the arbiter is to alternate granting bus access to a requesting one of the master clients and a requesting one of the target clients.

Response to Amendment

8. Applicant's amendment filed on 8/1/05 have been fully considered but are moot in view of the new ground(s) of rejection.

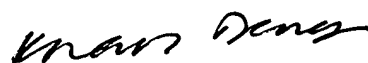
Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. *Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kim Huynh whose telephone number is (571)272-3635 or via e-mail addressed to [kim.huynh3@uspto.gov]. The examiner can normally be reached on M-F 9:00AM- 6:00PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rehana Perveen can be reached at (571)272-3676 or via e-mail addressed to [rehana.perveen@uspto.gov].*

The fax phone numbers for the organization where this application or proceeding is assigned are (571)273-8300 for regular communications and After Final communications. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571)272-2100.



Kim Huynh

October 13, 2005

